

CLAIMS:

1. A method of manufacturing an insulated coil for an electric rotating machinery, comprising the steps of:

taping a mica tape on a conductor to mold a coil having an
5 insulating layer;

impregnating the coil with resin under vacuum and pressure condition;

attaching a molding jig to the coil impregnated with the resin;
and

10 heating the resin with which the coil is impregnated, to cure the resin to thereby provide an insulated coil,

wherein the mica tape taping step, a heat-shrinkable tape taping step, the impregnating step under vacuum and pressure condition, the resin heating/curing step utilizing a liquid heating
15 compound and a molding jig-disassembling/finishing step are carried out to manufacture the insulated coil.

2. A method of manufacturing an insulated coil for an electric rotating machinery according to claim 1, wherein said resin heating/curing step comprises a curing step of the resin with a use
20 of either one of liquid heating compound of polyolefin material and polyethylene material.

3. A method of manufacturing an insulated coil for an electric rotating machinery according to claim 2, wherein either one of liquid heating compound of polyolefin material and polyethylene material,

which is to be used at a time of curing the resin, has a melting point of not more than 135°C.

4. A method of manufacturing an insulated coil for an electric rotating machinery according to claim 2, wherein either one of liquid heating compound of polyolefin material and polyethylene material, which is to be used at a time of curing the resin, has a viscosity of not more than 100Pa·s at a temperature of 150°C.
5. A method of manufacturing an insulated coil for an electric rotating machinery according to claim 2, wherein at least one of antioxidant and antistatic agent is added to either one of liquid heating compound of polyolefin material and polyethylene material, which is to be used at a time of curing the resin.
6. A method of manufacturing an insulated coil for an electric rotating machinery according to claim 1, wherein in the taping step, a curing reaction accelerator is held to the mica tape so that the curing reaction accelerator agent is distributed in a large amount to a side of the coil, which is close to the conductor, and also distributed in a null or small amount to a side of the coil, which is away from the conductor.
7. A method of manufacturing an insulated coil for an electric rotating machinery according to claim 1, wherein in the heat-shrinkable tape taping step, a releasing tape is taped on an outer side of the mica tape by which the insulating layer is molded on the conductor of the coil, pressure plates for a molding process

are contacted to the releasing tape, and the heat-shrinkable tape is taped on the pressure plates to fix the plates.

8. A method of manufacturing an insulated coil for an electric rotating machinery according to claim 7, wherein either one of a
5 metallic plate and a fiber-reinforced lamination plate is used as the pressure plates for a straight portion of the coil.
9. A method of manufacturing an insulated coil for an electric rotating machinery according to claim 7, wherein a plastic plate is used as the pressure plates for a curved portion of the coil.
- 10 10. A method of manufacturing an insulated coil for an electric rotating machinery according to claim 9, wherein said plastic plate is molded of polyamide material.
11. A method of manufacturing an insulated coil for an electric rotating machinery according to claim 7, wherein said
15 heat-shrinkable tape is molded of any one of a thermoplastic tape, a heat-shrinkable tube and a heat-shrinkable cloth subjected to a release-agent process.
12. A method of manufacturing an insulated coil for an electric rotating machinery according to claim 1, wherein, in the resin
20 heating/curing step, a receiving pan is provided on a bottom portion of a base member supporting the coil to receive drop-down resin.
13. A method of manufacturing an insulated coil for an electric rotating machinery according to claim 12, wherein said receiving pan

is provided with either one of a metallic film and a heat resistant film for a linear portion of the coil, with a heat resistant film for a curved portion of an end of the coil, and with either one of a heat resistant film and a non-woven fabric for an edge of the end of the coil.

- 5 14. A method of manufacturing an insulated coil for an electric rotating machinery, which comprises:

a taping step for taping a mica tape on a conductor to mold a coil insulating layer;

10 a heat-shrinkable tape taping step for taping and then fixing, after taping a releasing tape on an outer side of the mica tape and then bringing a pressure plate for a molding process into contact with the releasing tape, a heat-shrinkable tape on the pressure plate to hold them;

15 a vacuum/pressure impregnating step for impregnating a coil thus would with resin under vacuum and pressure condition;

a jig attaching step for attaching a coil-molding jig on the coil impregnated with the resin;

20 a resin heating/curing step for heating the resin, with which an insulating layer of the coil is impregnated, with a use of a liquid compound to cure the resin; and

a jig-disassembling/finishing step of the jig.

15. An insulated coil characterized by a manufacturing method comprising the steps of: taping a mica tape on a conductor to mold a coil-conductor insulating layer; taping and then fixing, after taping a
25 releasing tape on an outer side of the mica tape and then bringing a

- pressure plate for a molding process into contact with the releasing tape, a heat-shrinkable tape on the pressure plate; impregnating a thus taped coil with a resin under vacuum and pressure condition; attaching a coil-molding jig on the coil impregnated with the resin;
- 5 heating the resin, with which an insulating layer of the coil is impregnated, to cure the resin; and disassembling the jig and finishing the manufacturing operation.